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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,489	05/24/2001	Dietbert Schoenfelder	10191/1831	2983
26646	7590	07/30/2004	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			MILLER, CARL STUART	
			ART UNIT	PAPER NUMBER
			3747	

DATE MAILED: 07/30/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/864,489

Applicant(s)

SCHOENFELDER ET AL.

Examiner

Carl S. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Creighton in view of Sekiguchi.

In particular, at column 3, lines 23-25, Creighton teaches a "fixed time interval" between pilot and main injection pulses. The main pulse is also a function of engine speed. The control elements of the reference are, of course, driving switches used to power an electro-expansive pump element.

Sekiguchi teaches an injection pump which monitors an actual start of pump injection and corrects a signal to the timing setting valve to make the actual timing equal to the target timing. Note also that the quantity of injection is set according to the timing of the beginning of injection.

Since the Sekiguchi method of main fuel control was well known in the art, it would have been obvious to apply this method to the main fuel pulse of Creighton.

Applicant's arguments filed March 3, 2004 have been fully considered but they are not persuasive. In particular, the examiner has again carefully reviewed applicant's comments regarding the Creighton disclosure, but respectfully disagrees with the conclusions he draws from the cited passages (of November 2002) and the new

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remarks of March, 2004. Applicant's position continues to be that the lead time computer predicts a time for main injection for the purpose of creating a fixed time interval between pilot and main injection, but, since the predicted main injection time and the actual main injection time are not the same, the goal of the lead time computer is not achieved. If this is true then Creighton is stating that his system does not do what he wants it to do. Applicant has restated this argument by now calling for a main delay correction, but this delay consideration is known from Sekiguchi.

In reality, Creighton never says that the actual time and the predicted time of main injection are not the same, or at least different enough to not achieve the desired result of keeping the gap between injections constant. Some systems use an injector sensor which does measure actual injector timing as part of a feedback loop, but Creighton does not feel the need for this since his system can sufficiently achieve the goal of setting a fixed interval between the injections. Applicant's claims require a method wherein a fixed interval is set and Creighton teaches such a method. While there may exist some details of applicant's system that cause it to achieve this goal more accurately than Creighton, these details are still not claimed (except as noted requiring the addition of Sekiguchi) and nothing in Creighton states that his system fails to achieve the claimed method. Certainly, the additional teaching of Sekiguchi would have made the consideration of main injection delay (now claimed) obvious to consider when practicing the Creighton method.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

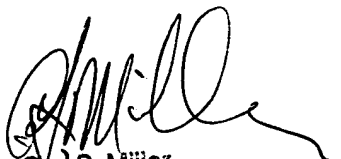
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl S. Miller whose telephone number is 703-308-2653. The examiner can normally be reached on MTWTHF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry YUEN, can be reached at 703-308-1946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Carl S. Miller
Primary Examiner